

WHAT IS CLAIMED IS:

1. A method of identifying distorted output signals from a digital system caused by at least one distorted input signal to the digital system, the method comprising:

modeling a delay and widening characteristics of the digital system to provide a tracking circuit;

providing an input signal to the tracking circuit wherein the input signal has a first value when a distorted signal is input to the digital system and has a second value when a non-distorted signal is input to the digital system;

operating the tracking circuit in parallel with the digital system; and

providing an output signal from the tracking circuit wherein the output signal has a first value to indicate that a corresponding output signal from the digital system is distorted and has a second value to indicate that a corresponding output signal from the digital system is not distorted.

2. The method of claim 1, wherein the digital system is a digital filter.

3. The method of claim 2, wherein modeling a delay and widening characteristics of the digital system comprises providing a digital filter model that models the delay and the widening characteristics of the digital filter.

4. A method of identifying distorted signals output from a digital filter caused by at one distorted signal input to the digital filter, the method comprising:

delaying an input signal for a predetermined amount of time when a distorted signal is input to the digital filter wherein the input signal has a first value when a

distorted signal is input to the digital system and has a second value when a non-distorted signal is input to the digital system;

providing the delayed first input signal to a counter;

setting a counter to N and decrementing the counter by one until either the counter reaches zero or a subsequent signal is received by the counter that equals the first value;

resetting the counter to N if the subsequent signal equals the first value; and

outputting an output signal wherein the output signal has a first value if a counter output is non-zero to indicate a corresponding output signal from the digital filter is distorted and has a second value if the counter output is zero to indicate a corresponding output signal from the digital filter is not distorted,

wherein N equals a number of filter coefficients of the digital filter from a first non-zero filter coefficient to a last non-zero filter coefficient.

5. A method of identifying distorted signals output from a digital system caused by at least one distorted signal input to the digital system, the method comprising:

providing a tracking circuit which models the delay and the widening characteristics of the digital system; and

operating the tracking circuit in parallel with the digital system.

6. The method of claim 5, wherein the digital system is a digital filter.

7. The method of claim 6, wherein the tracking circuit is a digital filter model that models the delay and the widening characteristics of the digital filter.

8. An apparatus for identifying distorted signals output from a digital filter caused by a distorted signal input to the digital filter, the apparatus comprising:

means for modeling the delay of the digital filter; and

means for modeling the widening characteristics of the digital filter.

9. An apparatus for identifying distorted output signals from a digital filter caused by at least one distorted signal input to the digital filter, wherein a first signal is input to said apparatus having a first value when a distorted signal is input to the digital filter or a second value when a non-distorted signal is input to the digital filter, the circuit comprising:

a delay circuit to receive the first signal and to delay the first signal for a predetermined time forming a delayed first signal;

a counter to receive the delayed first signal, wherein the counter is configured to count down from N until either the counter reaches zero or a subsequent signal is received by the counter that equals the first value and configured to reset to N if the subsequent signal equals the first value; and

a decision unit to determine whether an output from the counter is non-zero,

wherein N equals a number of filter coefficients of the digital filter from a first non-zero filter coefficient to a last non-zero filter coefficient.